

## Revisiting the dilemma of review for modeled wage estimates by job characteristic

*In this followup to an earlier article that described how data from two surveys were combined to produce experimental wage estimates by area, occupation, and job characteristic, the estimates obtained and the criteria for publication of an estimate are reviewed. The article also reports a more extensive set of experimental wage estimates by area, occupation, and job characteristic.*

In August 2013, Michael Lettau and Dee Zamora reported on a new estimation model developed by the Bureau of Labor Statistics (BLS) that combines data from the National Compensation Survey (NCS) and the Occupational Employment Statistics (OES) survey to produce wage estimates by area, occupation, and job characteristic.<sup>1</sup> Drawing on the large sample size of the OES survey and on data on job characteristics from the NCS, the model provides more extensive information about the wage rates of workers than either survey could provide individually. With about 800 occupations at the two- and six-digit Standard Occupational Classification (SOC) levels; more than 400 areas for the nation, states, and metropolitan areas; and 38 characteristics by full-time and part-time status, union and nonunion bargaining status, time-paid and incentive-paid status, and full-time and part-time status by work levels,<sup>2</sup> the model has the potential to compute millions of wage estimates. To move the production of these modeled wage estimates toward regular publication, a process is needed to review and validate this massive volume of estimates in order to determine which ones are fit for publication. The material that follows describes the approach to reviewing and validating the estimates, goes on to discuss the criteria for their publication, and culminates in the presentation of a selected set of wage estimates by area, occupation, and job characteristic for 2013.



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Three criteria have been developed for whether an NCS–OES wage estimate for an area, an occupation, and a characteristic is eligible for publication: (1) there must be sufficient OES data to support a published estimate for the occupation in the area, (2) there must be sufficient NCS data for the area, occupation, and characteristic contributing to the wage estimate, and (3) the NCS–OES wage estimate for the area, occupation, and characteristic must fit broadly within expectations based on knowledge of compensation data.

With regard to the first criterion, the OES survey does not collect information on job characteristics, but it does publish wage estimates by area and occupation. To be consistent with these wage estimates, an NCS–OES wage estimate for an area, occupation, and characteristic is eligible for publication only if the OES wage estimate for the area and occupation was published. For example, the wage estimate for part-time stock clerks in the Nassau–Suffolk, NY, Metropolitan Division is eligible for publication only if the OES wage estimate for stock clerks in the Nassau–Suffolk, NY, Metropolitan Division was published.

With respect to the second criterion, as described in the earlier article, the NCS–OES estimation method calculates characteristic proportions (e.g., the proportion of part-time workers) from the NCS data. These proportions are used to allocate OES employment by characteristic, and the allocated OES employment counts by characteristic are then used to compute a characteristic mean wage for the area and occupation. Thus, the amount of NCS data for the area and occupation by characteristic is an important determinant of the reliability of the NCS–OES wage estimate.

The modeled estimates are calculated for the same areas as are published for the OES survey, namely, the nation, states, and metropolitan areas, such as Metropolitan Statistical Areas (MSAs) and Metropolitan Divisions. The characteristic proportions that are used in the calculations are based on 24 areas that the NCS uses (15 large metropolitan areas and the 9 Census Divisions, excluding the 15 large metropolitan areas), and these proportions are applied to all OES employment counts by occupation for establishments within the NCS area. Therefore, with regard to the second criterion, the amount of available NCS data is based on the number of NCS observations for the occupation, characteristic, and NCS area for which the characteristic proportions are calculated, rather than the area to which the NCS–OES wage estimates refer. For example, whether the wage estimate for part-time stock clerks in the Nassau–Suffolk, NY, Metropolitan Division is eligible for publication will depend on the number of NCS observations available for part-time stock clerks in the New York–Newark–Bridgeport, NY–NJ–CT–PA, Combined Statistical Area. The New York–Newark–Bridgeport, NY–NJ–CT–PA, Combined Statistical Area, which includes the Nassau–Suffolk, NY, Metropolitan Division, is one of the 24 areas used for the NCS characteristic proportions. Specifically, it is the area used to allocate employment for stock clerks in OES establishments from the Nassau–Suffolk, NY, Metropolitan Division.

Under the publication criteria that were used for the (discontinued) NCS wage program, estimates that met the criterion for enough NCS data to support a publishable estimate nearly always also had a sufficiently low relative standard error. Thus, the requirement of a sufficient amount of NCS data supporting the NCS–OES wage estimate will serve to some degree as a proxy for a criterion based on the yet-to-be-developed standard errors.

The third criterion for eligibility for publication uses an expectation calculated from a regression model. Originally, the model was developed to facilitate the review and validation of the very large number of wage estimates that the NCS–OES procedure generates. However, it is also used to determine directly whether a wage estimate is eligible for publication. In the regression model, the NCS–OES wage estimates by area, occupation, and characteristic are regressed on variables for the six-digit SOC, the detailed geographic area, the interaction of the characteristic and

detailed geographic area, and the interaction of characteristic and broader occupational groupings. The model is fitted separately for the various characteristics that are estimated: union and nonunion, time and incentive, full time and part time, and full time and part time by work level. The regression uses NCS–OES employment estimates by area, occupation, and characteristic as weights.

The coefficients that the regression model estimates are then used to calculate an expectation for the wage rate for an area and occupation by job characteristic. NCS–OES wage estimates that deviate substantially from their expectation are defined as anomalous and are not eligible for publication. Of the wage estimates for MSAs by occupation and characteristic, about 3.4 percent differ from their expectation by more than 20 percent, the threshold currently applied. The estimates making up that 3.4 percent are deemed ineligible for publication.

After the publication criteria have been applied, the set of estimates that are eligible for publication is further checked to see whether it exhibits qualities that are inconsistent or counterintuitive. One validation report lists the estimates that differ greatly from year to year. Only three sets of annual estimates have been produced thus far. The year-to-year review will improve when a longer history of estimates has been established. Another validation report lists the relationship of the wage estimates among the types of characteristics. Because the NCS data are used to allocate the OES employment counts to the characteristics, the relationship among the types of characteristics in the NCS data is expected to hold as well in the NCS–OES estimates. For example, if the union wage estimate in the NCS data is higher than the nonunion wage estimate for an area and occupation, then it is assumed that this relationship will be carried through to the NCS–OES estimates. When the relationship of a type of characteristic is the opposite from what is seen in the NCS data (e.g., the nonunion wage is higher than the union wage), the estimates are identified and reviewed to determine why that is so. In addition, a validation report is produced which lists the estimates that narrowly passed the residual threshold criterion, so the reviewer can assess whether, all other things being equal, the estimate is within expectations and suitable for publication.

The review of the most recent estimates revealed additional reports for consideration during the validation process, including one that flags when the publishable part-time estimate is greater than the publishable full-time estimate. The expectation is that the full-time estimate is greater than the part-time estimate, but there are known cases (e.g., registered nurses) where this expectation is not always met. Another expectation, which may be captured in a future report, is that wage estimates almost always rise from job level to job level (i.e., as the job level increases, the mean wage almost always does, too). In addition, there is a need to identify what is thought to be an atypical characteristic for an occupation. For example, incentive and union employees are expected in certain occupations, but they also are seen in other occupations once it is learned what the circumstances are for the occupation or establishment. These special cases might be identified in a frequency report of occupations for a given characteristic.

Although no schedule has been established for the modeled estimates to appear in a recurring BLS publication, efforts are being made to develop such a publication. Standard errors also are being developed that would be published with the estimates and would add another criterion to determine eligibility for publication and assess the reliability of the estimates.

## **Wage estimates for May 2013**

The earlier article presented wage estimates for registered nurses and general office clerks in selected metropolitan areas for May 2011. In the current article, tables 1 through 4 show a select set of NCS–OES wage estimates by job characteristic for May 2013. The estimates in these tables pass the three criteria for publication. Table 1 shows the national wage estimates for the detailed occupations within office and administrative support occupations, a major occupation group, by union, nonunion, full-time, and part-time worker characteristics. These detailed occupations were selected on the basis of the preponderance of publishable estimates. Table 2 shows estimates for full-time and part-time workers by work level for the same occupations. These estimates are published for 15 levels based on a point system of four factors: knowledge, job controls and complexity, contacts, and physical environment. The work level is determined by the sum of the points for the four factors.

**Table 1. Experimental national estimates of mean hourly wage rates for office and administrative support occupations, by union, nonunion, full-time, and part-time status, May 2013**

Office and administrative support occupations	Union	Nonunion	Full time	Part time
Bookkeeping, accounting, and auditing clerks	\$21.13	\$17.64	\$18.17	\$16.10
File clerks	—	—	16.58	10.50
Interviewers, except eligibility and loan	20.15	14.84	16.40	12.48
Receptionists and information clerks	17.57	13.09	14.25	10.73
Reservation and transportation ticket agents and travel clerks	19.66	15.98	17.70	14.69
Information and record clerks, all other	20.66	16.07	17.05	15.14
Stock clerks and order fillers	14.50	11.21	14.00	9.99
Executive secretaries and executive administrative assistants	23.40	25.03	25.15	20.98
Medical secretaries	20.16	15.66	16.12	14.47
Data entry keyers	17.52	13.50	14.26	13.98
Office clerks, general	19.21	13.75	15.75	11.30
Office and administrative support workers, all other	18.47	15.79	17.82	12.18

Note: Employees are classified as working either a full-time or a part-time schedule on the basis of the definition used by each establishment. Union workers are those whose wages are determined through collective bargaining. Dash indicates that the estimate did not meet publication criteria.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 2. Experimental national estimates of mean hourly wage rates for office and administrative support occupations, by full-time and part-time status, by work level, May 2013**

Office and administrative support occupations	Full time				Part time			
	Level 2	Level 3	Level 4	Level 5	Level 2	Level 3	Level 4	Level 5
Bookkeeping, accounting, and auditing clerks	—	\$12.00	\$15.72	\$19.39	—	\$10.74	\$14.78	\$18.79
File clerks	\$12.68	16.03	17.03	—	\$11.67	—	—	—
Interviewers, except eligibility and loan	—	13.68	16.89	18.54	—	14.71	—	—
Receptionists and information clerks	11.95	14.13	15.93	—	9.99	12.25	12.98	—
Reservation and transportation ticket agents and travel clerks	—	12.47	18.12	21.13	—	—	—	—
Information and record clerks, all other	13.49	12.39	16.29	20.73	—	—	18.07	—
Stock clerks and order fillers	11.89	14.28	16.19	20.25	9.59	11.28	13.79	—
Executive secretaries and executive administrative assistants	—	—	17.03	21.84	—	—	—	—
Medical secretaries	—	13.01	16.00	18.01	—	—	18.38	—

See footnotes at end of table.

**Table 2. Experimental national estimates of mean hourly wage rates for office and administrative support occupations, by full-time and part-time status, by work level, May 2013**

Office and administrative support occupations	Full time				Part time			
	Level 2	Level 3	Level 4	Level 5	Level 2	Level 3	Level 4	Level 5
Data entry keyers	11.57	14.26	16.37	—	—	—	—	—
Office clerks, general	11.18	13.27	15.84	18.95	10.15	11.05	14.58	17.05
Office and administrative support workers, all other	—	14.36	16.72	20.34	9.82	11.74	18.23	18.43

Note: Dash indicates that the estimate did not meet publication criteria.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

Tables 3 and 4 show wage estimates for stock clerks and order fillers (SOC 43-5081). In table 3, wage estimates for union, nonunion, full-time, and part-time workers are shown for selected metropolitan areas. In table 4, wage estimates are shown for full-time and part-time stock clerks and order fillers by work level for the same metropolitan areas. Tables 5 through 7 present wage estimates by bargaining status, time and incentive status, and full-time and part-time status for three MSAs with large employment: the New York–White Plains–Wayne, NY–NJ, Metropolitan Division; Los Angeles–Long Beach–Glendale, CA, Metropolitan Division; and Chicago–Joliet–Naperville, IL, Metropolitan Division, respectively. Finally, tables 8 through 10 provide information on full-time and part-time workers by work level for these same three MSAs, respectively. Data for which the work level could not be determined are indicated in the estimate “Not able to be leveled.” Together with estimates of identified work levels that also were published, estimates that were “not able to be leveled” may help form a more complete picture of the distribution of wage rates for the associated area and occupation.

**Table 3. Experimental estimates of mean hourly wage rates for stock clerks and order fillers, selected metropolitan areas, by union, nonunion, full-time, and part-time status, May 2013**

Area	Union	Nonunion	Full time	Part time
Charlotte–Gastonia–Rock Hill, NC–SC, MSA	—	—	\$13.22	\$9.29
Chicago–Joliet–Naperville, IL, Metropolitan Division	\$12.87	\$10.66	15.96	10.50
Denver–Aurora–Broomfield, CO, MSA	—	—	15.70	11.29
Edison–New Brunswick, NJ, Metropolitan Division	14.02	10.94	15.20	10.24
Las Vegas–Paradise, NV, MSA	—	—	14.70	10.67
Los Angeles–Long Beach–Glendale, CA, Metropolitan Division	15.03	11.66	12.86	11.29
Nashville–Davidson–Murfreesboro–Franklin, TN, MSA	13.30	10.49	13.43	9.27
Nassau–Suffolk, NY, Metropolitan Division	13.87	10.77	15.15	10.08
Newark–Union, NJ–PA, Metropolitan Division	14.34	10.80	15.64	10.09
New York–White Plains–Wayne, NY–NJ, Metropolitan Division	13.66	10.42	14.94	9.87
Orlando–Kissimmee–Sanford, FL, MSA	—	—	12.67	9.38
Portland–Vancouver–Hillsboro, OR–WA, MSA	17.14	12.49	15.59	11.54
Riverside–San Bernardino–Ontario, CA, MSA	14.48	11.61	12.64	11.30
Sacramento–Arden–Arcade–Roseville, CA, MSA	18.27	11.68	16.04	10.58
San Antonio–New Braunfels, TX, MSA	—	—	13.27	9.36
San Diego–Carlsbad–San Marcos, CA, MSA	—	—	14.64	11.01
Santa Ana–Anaheim–Irvine, CA, Metropolitan Division	15.32	12.02	13.22	11.57

See footnotes at end of table.

Note: For definitions of the metropolitan areas listed, see "May 2013 metropolitan and nonmetropolitan area estimates listed by county or town," Occupational Employment Statistics (U.S. Bureau of Labor Statistics, April 1, 2014), [https://www.bls.gov/oes/2013/may/county\\_links.htm](https://www.bls.gov/oes/2013/may/county_links.htm). Dash indicates that the estimate did not meet publication criteria.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 4. Experimental estimates of mean hourly wage rates for stock clerks and order fillers, selected metropolitan areas, by full-time and part-time status, by work level, May 2013**

Area	Full time		Part time	
	Level 2	Level 3	Level 1	Level 2
Charlotte–Gastonia–Rock Hill, NC–SC, MSA	\$11.33	\$13.24	\$8.71	\$9.39
Chicago–Joliet–Naperville, IL, Metropolitan Division	—	—	—	—
Denver–Aurora–Broomfield, CO, MSA	—	—	—	10.35
Edison–New Brunswick, NJ, Metropolitan Division	—	16.01	8.91	9.90
Las Vegas–Paradise, NV, MSA	—	—	—	9.94
Los Angeles–Long Beach–Glendale, CA, Metropolitan Division	10.18	—	—	8.90
Nashville–Davidson–Murfreesboro–Franklin, TN, MSA	13.03	—	—	9.47
Nassau–Suffolk, NY, Metropolitan Division	—	15.80	8.85	9.78
Newark–Union, NJ–PA, Metropolitan Division	—	16.33	8.88	9.82
New York–White Plains–Wayne, NY–NJ, Metropolitan Division	—	—	8.73	9.61
Orlando–Kissimmee–Sanford, FL, MSA	11.34	12.82	9.06	9.63
Portland–Vancouver–Hillsboro, OR–WA, MSA	—	16.48	—	10.89
Riverside–San Bernardino–Ontario, CA, MSA	10.09	—	—	8.88
Sacramento–Arden–Arcade–Roseville, CA, MSA	—	17.84	—	9.97
San Antonio–New Braunfels, TX, MSA	10.57	—	—	—
San Diego–Carlsbad–San Marcos, CA, MSA	—	16.38	—	10.00
Santa Ana–Anaheim–Irvine, CA, Metropolitan Division	10.24	—	—	8.95

Note: For definitions of the metropolitan areas listed, see "May 2013 metropolitan and nonmetropolitan area estimates listed by county or town," Occupational Employment Statistics (U.S. Bureau of Labor Statistics, April 1, 2014), [https://www.bls.gov/oes/2013/may/county\\_links.htm](https://www.bls.gov/oes/2013/may/county_links.htm). Dash indicates that the estimate did not meet publication criteria.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 5. Experimental area estimates of mean hourly wage rates, by union, nonunion, time, incentive, full-time, and part-time status, New York–White Plains–Wayne, NY–NJ, Metropolitan Division, May 2013**

Occupation	Union	Nonunion	Time	Incentive	Full time	Part time
Management occupations	\$55.42	\$73.92	\$73.04	\$74.31	—	—
Business and financial operations occupations	40.03	44.73	42.19	74.94	\$44.76	\$33.88
Accountants and auditors	45.19	44.79	—	—	—	—
Computer and mathematical occupations	44.06	45.90	—	—	—	—
Architecture and engineering occupations	39.17	39.97	—	—	—	—
Life, physical, and social science occupations	41.54	32.62	—	—	—	—
Community and social service occupations	30.60	21.73	—	—	—	—
Legal occupations	50.06	72.26	—	—	—	—
Education, training, and library occupations	36.56	28.17	—	—	35.20	20.69
Arts, design, entertainment, sports, and media occupations	43.40	37.13	—	—	—	—

See footnotes at end of table.



**Table 5. Experimental area estimates of mean hourly wage rates, by union, nonunion, time, incentive, full-time, and part-time status, New York–White Plains–Wayne, NY–NJ, Metropolitan Division, May 2013**

Occupation	Union	Nonunion	Time	Incentive	Full time	Part time
Healthcare practitioners and technical occupations	43.42	42.69	—	—	43.81	39.97
Physicians and surgeons, all other	83.99	71.04	—	—	—	—
Registered nurses	41.89	39.07	—	—	41.10	38.50
Licensed practical and licensed vocational nurses	23.94	25.35	—	—	—	—
Healthcare support occupations	18.03	12.08	—	—	17.08	10.75
Nursing assistants	17.49	14.12	—	—	17.06	13.84
Protective service occupations	34.16	16.37	—	—	27.76	14.60
Security guards	18.90	14.30	—	—	—	—
Food preparation and serving related occupations	15.32	11.32	—	—	14.51	10.04
Food preparation workers	11.73	12.15	—	—	12.44	11.32
Building and grounds cleaning and maintenance occupations	18.40	14.87	—	—	17.30	12.45
Janitors and cleaners, except maids and housekeeping cleaners	17.70	13.20	—	—	16.58	11.41
Maids and housekeeping cleaners	19.63	15.64	—	—	—	—
Landscaping and groundskeeping workers	21.26	14.01	—	—	—	—
Personal care and service occupations	19.03	12.72	—	—	15.45	11.99
Sales and related occupations	13.34	29.68	22.29	46.51	35.95	10.48
Cashiers	11.56	9.34	—	—	12.00	9.21
Retail salespersons	14.21	12.70	11.26	21.21	15.53	10.30
Securities, commodities, and financial services sales agents	—	—	70.15	88.76	—	—
Office and administrative support occupations	19.90	19.53	19.47	27.75	21.61	11.70
Bookkeeping, accounting, and auditing clerks	24.05	20.36	—	—	22.84	14.96
Tellers	—	—	—	—	14.21	12.37
Information and record clerks, all other	20.72	20.79	—	—	—	—
Stock clerks and order fillers	13.66	10.42	—	—	14.94	9.87
Secretaries and administrative assistants, except legal, medical, and executive	23.47	18.05	—	—	19.68	15.89
Office clerks, general	17.06	13.98	—	—	17.39	9.92
Construction and extraction occupations	38.34	23.52	—	—	—	—
Installation, maintenance, and repair occupations	31.25	21.20	—	—	—	—
Maintenance and repair workers, general	26.91	17.27	—	—	—	—
Production occupations	20.90	16.26	—	—	18.00	10.64
Transportation and material moving occupations	25.95	15.88	—	—	21.23	14.56
Heavy and tractor–trailer truck drivers	27.92	18.76	—	—	—	—
Industrial truck and tractor operators	19.04	14.33	—	—	—	—
Laborers and freight, stock, and material movers, hand	20.39	13.32	—	—	—	—

Note: Wages of time workers are based solely on their hourly rate or salary; incentive workers are those whose wages are at least partially based on productivity payments, such as piece rates, commissions, and production bonuses. Dash indicates that the estimate did not meet publication criteria.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 6. Experimental area estimates of mean hourly wage rates, by union, nonunion, time, incentive, full-time, and part-time status, Los Angeles–Long Beach–Glendale, CA, Metropolitan Division, May 2013**

Occupation	Union	Nonunion	Time	Incentive	Full time	Part time
Management occupations	\$46.58	\$60.15	\$59.11	\$66.32	—	—

See footnotes at end of table.

**Table 6. Experimental area estimates of mean hourly wage rates, by union, nonunion, time, incentive, full-time, and part-time status, Los Angeles–Long Beach–Glendale, CA, Metropolitan Division, May 2013**

Occupation	Union	Nonunion	Time	Incentive	Full time	Part time
Business and financial operations occupations	29.73	37.16	—	—	—	—
Computer and mathematical occupations	37.72	43.17	—	—	—	—
Architecture and engineering occupations	45.44	44.00	—	—	—	—
Life, physical, and social science occupations	38.92	36.02	—	—	—	—
Community and social service occupations	29.14	20.82	—	—	—	—
Education, training, and library occupations	30.56	25.60	—	—	\$31.67	\$20.49
Arts, design, entertainment, sports, and media occupations	45.35	41.51	—	—	44.97	25.47
Healthcare practitioners and technical occupations	42.59	42.52	—	—	42.82	41.75
Registered nurses	45.45	43.86	—	—	41.53	48.16
Healthcare support occupations	18.21	14.64	—	—	15.67	14.18
Nursing assistants	15.90	12.27	—	—	—	—
Protective service occupations	38.00	13.63	—	—	28.00	12.97
Food preparation and serving related occupations	13.99	10.32	—	—	12.65	9.56
Combined food preparation and serving workers, including fast food	13.03	9.48	—	—	12.39	9.01
Building and grounds cleaning and maintenance occupations	18.85	11.90	—	—	14.80	10.93
Janitors and cleaners, except maids and housekeeping cleaners	18.21	11.42	—	—	—	—
Personal care and service occupations	17.55	12.37	—	—	14.40	12.03
Sales and related occupations	17.96	19.49	15.74	32.59	25.26	10.73
Cashiers	—	—	—	—	11.88	10.13
Retail salespersons	—	—	10.35	18.97	17.05	10.35
Office and administrative support occupations	20.95	17.46	17.99	19.87	19.21	13.40
Bookkeeping, accounting, and auditing clerks	21.91	19.38	—	—	—	—
Tellers	—	—	12.45	13.84	13.77	11.84
Stock clerks and order fillers	15.03	11.66	—	—	12.86	11.29
Executive secretaries and executive administrative assistants	31.77	27.25	—	—	—	—
Office clerks, general	20.40	13.16	—	—	15.98	13.33
Office and administrative support workers, all other	14.62	12.89	—	—	—	—
Construction and extraction occupations	32.60	21.48	—	—	—	—
Installation, maintenance, and repair occupations	32.73	20.38	23.68	22.25	—	—
Production occupations	21.07	14.55	—	—	16.01	10.91
Transportation and material moving occupations	22.49	13.77	—	—	17.88	11.96
Laborers and freight, stock, and material movers, hand	—	—	—	—	13.52	11.90

Note: Dash indicates that the estimate did not meet publication criteria.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 7. Experimental area estimates of mean hourly wage rates, by union, nonunion, time, incentive, full-time, and part-time status, Chicago–Joliet–Naperville, IL, Metropolitan Division, May 2013**

Occupation	Union	Nonunion	Time	Incentive	Full time	Part time
Business and financial operations occupations	—	—	\$34.96	\$46.86	—	—
Community and social service occupations	\$32.19	\$19.09	—	—	—	—
Education, training, and library occupations	34.39	21.77	—	—	\$29.32	\$14.74
Healthcare practitioners and technical occupations	39.97	35.16	—	—	37.33	31.49
Registered nurses	—	—	—	—	34.25	34.43

See footnotes at end of table.



**Table 7. Experimental area estimates of mean hourly wage rates, by union, nonunion, time, incentive, full-time, and part-time status, Chicago–Joliet–Naperville, IL, Metropolitan Division, May 2013**

Occupation	Union	Nonunion	Time	Incentive	Full time	Part time
Healthcare support occupations	—	—	—	—	14.57	11.88
Nursing assistants	—	—	—	—	12.66	12.11
Protective service occupations	32.80	14.21	—	—	25.50	11.19
Food preparation and serving related occupations	14.54	10.32	—	—	12.64	9.55
Combined food preparation and serving workers, including fast food	—	—	—	—	10.34	9.11
Building and grounds cleaning and maintenance occupations	17.81	11.95	—	—	13.93	10.19
Janitors and cleaners, except maids and housekeeping cleaners	17.27	11.20	—	—	—	—
Personal care and service occupations	—	—	—	—	13.56	11.73
Sales and related occupations	—	—	16.17	34.38	26.95	11.10
Cashiers	—	—	—	—	11.19	9.99
Retail salespersons	—	—	10.41	18.00	16.39	10.43
Office and administrative support occupations	18.67	17.43	17.48	21.17	19.42	12.84
Customer service representatives	—	—	—	—	20.62	14.12
Stock clerks and order fillers	12.87	10.66	—	—	15.96	10.50
Office clerks, general	19.85	14.66	—	—	16.88	11.88
Construction and extraction occupations	35.88	21.05	—	—	—	—
Installation, maintenance, and repair occupations	30.25	20.47	—	—	—	—
Production occupations	20.93	15.58	—	—	—	—
Transportation and material moving occupations	22.45	14.59	—	—	19.43	11.64

Note: Dash indicates that the estimate did not meet publication criteria.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 8. Experimental area estimates of mean hourly wage rates, by full-time and part-time status, by work level, New York–White Plains–Wayne, NY–NJ, Metropolitan Division, May 2013**

Occupation	Full time	Part time
Business and financial operations occupations	\$44.76	\$33.88
Education, training, and library occupations	35.20	20.69
Level 4	14.74	15.50
Level 9	36.87	30.57
Not able to be leveled	37.92	14.42
Healthcare practitioners and technical occupations	43.81	39.97
Level 6	26.34	24.76
Level 9	40.19	38.68
Registered nurses	41.10	38.50
Level 9	39.58	38.05
Healthcare support occupations	17.08	10.75
Level 3	14.42	9.48
Level 4	17.23	15.93
Nursing assistants	17.06	13.84
Protective service occupations	27.76	14.60
Food preparation and serving related occupations	14.51	10.04
Level 1	9.29	8.28
Level 2	11.44	10.53

See footnotes at end of table.

**Table 8. Experimental area estimates of mean hourly wage rates, by full-time and part-time status, by work level, New York–White Plains–Wayne, NY–NJ, Metropolitan Division, May 2013**

Occupation	Full time	Part time
Level 3	12.05	10.72
Food preparation workers	12.44	11.32
Building and grounds cleaning and maintenance occupations	17.30	12.45
Janitors and cleaners, except maids and housekeeping cleaners	16.58	11.41
Personal care and service occupations	15.45	11.99
Level 3	11.23	10.99
Sales and related occupations	35.95	10.48
Level 2	11.92	9.62
Level 3	15.58	10.80
Not able to be leveled	42.42	10.19
Cashiers	12.00	9.21
Retail salespersons	15.53	10.30
Level 2	10.62	10.09
Office and administrative support occupations	21.61	11.70
Level 2	12.73	9.88
Level 3	15.32	13.15
Level 4	18.31	15.36
Not able to be leveled	24.00	13.25
Bookkeeping, accounting, and auditing clerks	22.84	14.96
Tellers	14.21	12.37
Level 3	11.78	11.54
Stock clerks and order fillers	14.94	9.87
Secretaries and administrative assistants, except legal, medical, and executive	19.68	15.89
Office clerks, general	17.39	9.92
Production occupations	18.00	10.64
Transportation and material moving occupations	21.23	14.56
Level 1	9.35	10.27
Level 2	12.82	12.01
Level 3	18.87	20.21
Level 4	23.69	18.44

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 9. Experimental area estimates of mean hourly wage rates, by full-time and part-time status, by work level, Los Angeles–Long Beach–Glendale, CA, Metropolitan Division, May 2013**

Occupation	Full time	Part time
Education, training, and library occupations	\$31.67	\$20.49
Level 9	34.35	33.12
Level 10	39.81	31.03
Not able to be leveled	27.04	19.84
Arts, design, entertainment, sports, and media occupations	44.97	25.47
Not able to be leveled	46.08	23.74
Healthcare practitioners and technical occupations	42.82	41.75
Level 9	40.31	47.71

See footnotes at end of table.

**Table 9. Experimental area estimates of mean hourly wage rates, by full-time and part-time status, by work level, Los Angeles–Long Beach–Glendale, CA, Metropolitan Division, May 2013**

Occupation	Full time	Part time
Not able to be leveled	56.71	54.18
Registered nurses	41.53	48.16
Level 9	40.09	48.36
Healthcare support occupations	15.67	14.18
Protective service occupations	28.00	12.97
Food preparation and serving related occupations	12.65	9.56
Level 1	9.07	8.80
Level 3	11.68	9.93
Combined food preparation and serving workers, including fast food	12.39	9.01
Building and grounds cleaning and maintenance occupations	14.80	10.93
Personal care and service occupations	14.40	12.03
Sales and related occupations	25.26	10.73
Level 2	9.97	9.27
Level 3	14.40	13.74
Not able to be leveled	28.50	10.45
Cashiers	11.88	10.13
Level 2	9.84	9.42
Retail salespersons	17.05	10.35
Office and administrative support occupations	19.21	13.40
Level 2	11.33	10.99
Level 3	14.16	13.65
Level 4	17.20	14.23
Not able to be leveled	21.17	14.32
Tellers	13.77	11.84
Level 3	12.74	11.57
Stock clerks and order fillers	12.86	11.29
Level 2	10.18	8.90
Office clerks, general	15.98	13.33
Production occupations	16.01	10.91
Transportation and material moving occupations	17.88	11.96
Level 1	9.71	10.32
Level 2	13.61	11.98
Level 3	15.72	14.76
Laborers and freight, stock, and material movers, hand	13.52	11.90

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

**Table 10. Experimental area estimates of mean hourly wage rates, by full-time and part-time status, by work level, Chicago–Joliet–Naperville, IL, Metropolitan Division, May 2013**

Occupation	Full time	Part time
Education, training, and library occupations	29.32	14.74
Healthcare practitioners and technical occupations	37.33	31.49
Level 9	35.48	36.14
Registered nurses	34.25	34.43

See footnotes at end of table.

**Table 10. Experimental area estimates of mean hourly wage rates, by full-time and part-time status, by work level, Chicago–Joliet–Naperville, IL, Metropolitan Division, May 2013**

Occupation	Full time	Part time
Level 9	34.65	35.18
Healthcare support occupations	14.57	11.88
Nursing assistants	12.66	12.11
Protective service occupations	25.50	11.19
Food preparation and serving related occupations	12.64	9.55
Level 3	10.44	10.22
Combined food preparation and serving workers, including fast food	10.34	9.11
Building and grounds cleaning and maintenance occupations	13.93	10.19
Personal care and service occupations	13.56	11.73
Sales and related occupations	26.95	11.10
Level 3	15.25	10.87
Not able to be leveled	29.87	10.49
Cashiers	11.19	9.99
Retail salespersons	16.39	10.43
Office and administrative support occupations	19.42	12.84
Level 2	11.99	11.76
Level 3	13.78	12.05
Level 4	17.16	16.19
Level 5	19.50	20.50
Not able to be leveled	22.63	13.81
Customer service representatives	20.62	14.12
Stock clerks and order fillers	15.96	10.50
Office clerks, general	16.88	11.88
Transportation and material moving occupations	19.43	11.64
Level 1	11.85	10.54

Source: U.S. Bureau of Labor Statistics, National Compensation Survey and Occupational Employment Statistics survey.

#### SUGGESTED CITATION

Michelle V. Myers and Dee A. Zamora, "Revisiting the dilemma of review for modeled wage estimates by job characteristic," *Monthly Labor Review*, U.S. Bureau of Labor Statistics, September 2015, <https://doi.org/10.21916/mlr.2015.36>.

#### NOTES

<sup>1</sup> See Michael K. Lettau and Dee A. Zamora, "Wage estimates by job characteristic: NCS and OES program data," *Monthly Labor Review*, August 2013, <https://www.bls.gov/opub/mlr/2013/article/lettau-zamora.htm>.

<sup>2</sup> Work levels are a ranking of the duties and responsibilities within an occupation and enable comparisons of wages across occupations. Work levels are determined by the number of points given for specific aspects, or factors, of the work. (For a complete description of point factor leveling, see *National Compensation Survey: guide for evaluating your firm's jobs and pay* (U.S. Bureau of Labor Statistics, May 2013, revised).)

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